

ABSTRACT OF THE DISCLOSURE

A method of making a magnetic alloy material includes the steps of: preparing a melt of an alloy material having a predetermined composition; rapidly cooling and solidifying the melt to obtain a rapidly solidified alloy represented by: $\text{Fe}_{100-a-b-c}\text{RE}_a\text{A}_b\text{TM}_c$ where RE is at least one rare-earth element selected from La, Ce, Pr, Nd, Pm, Sm, Eu, Gd, Tb, Dy, Ho, Er and Tm and including at least about 90 at% of La; A is at least one element selected from Al, Si, Ga, Ge and Sn; TM is at least one transition metal element selected from Sc, Ti, V, Cr, Mn, Co, Ni, Cu and Zn; and $5 \text{ at}\% \leq a \leq 10 \text{ at}\%$, $4.7 \text{ at}\% \leq b \leq 18 \text{ at}\%$ and $0 \text{ at}\% \leq c \leq 9 \text{ at}\%$; and producing a compound phase having an NaZn_{13} -type crystal structure in at least about 70 vol% of the rapidly solidified alloy.